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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,248	02/01/2002	Yoshihiro Ishikawa	219015US2	8892

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EXAMINER	
CAI, WAYNE HUU	

ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/060,248	ISHIKAWA ET AL.	
	Examiner	Art Unit	
	Wayne Cai	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-10 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-10 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed February 09, 2006 have been fully considered but they are not persuasive.

The Applicant argues that Raith fails to teach or suggest ***receiving a handover history from the mobile station,*** which identifies ***origination and destination base stations of previous successful handovers of the mobile stations.***

The Applicant further states that "route information" is not ***received from a mobile station***, but is instead stored within an MSC (14) or an HLR (15), or at any other location within the mobile communication network (10). Further, the "route information" is generated and stored within these network components using information generated within the network, and the only information received from the mobile device in Raith is location information. Therefore, this "route information" is not received from ***received from a mobile station***, but is instead generated by the network (10) using trends in handoff data for all mobile devices to define route information".

Finally, the Applicant argues that Raith fails to teach "***selecting at least a handover destination candidate based at least on the received handover history***".

The Examiner respectfully disagrees with assertions above because specifically at column 6, lines 31-38 describes that ***frequently traveled routes are stored in a route server*** connected to the mobile communication network 10, such as in the MSCs 14, the HLR 15, or at any other location. The stored routes are used by the mobile

communication network 10 to assist in making handoff decisions. ***One or more hand-off positions along each route are preferably stored in the route server.***

The passage above teaches that MSC or HLR stores frequently traveled routes of the mobile station, which is the history of the mobile station. This information or data is obviously *received from the mobile station*. Raith further teaches that ***one or more hand-off positions long each route are preferably stored in the route server***, in which it means that Raith describes *a handover history from the mobile station* because based on the traveled routes, and hand-off position where it was taken place, the MSC or HLR stores this information (i.e., the history information. Since the stored information related to handover positions, which is considered as handover history.) The handover history as described by Raith also identifies the bases stations of previous successful handovers of the mobile stations as recited in claims 1 and 12 because MSC or HLR stores information related to the position, location, or paths that the mobile station traveled, and the hand-off positions which are the base stations where it was successfully handover.

Furthermore, Raith teaches "the mobile communication network 10 can anticipate hand-offs as the mobile terminal 20 travels along a stored route by *comparing the position of the mobile terminal 20 with the stored hand-off positions*", in which it means that the handoff is selected based on the received handover history (i.e., handoff positions stored in MSC or HLR.)

Thus, previous rejection was still proper, and the copy of previous Office Action is included below to serve as information purpose only.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al (hereinafter "Lindsay") (US 2002/0009070 A1) in view of Raith (US – 6,711,408 B1), and in further view of Ida et al (hereinafter "Ida") (US 2002/0082036 A1).

Regarding claims 1 and 12, Lindsay discloses a handover control method and a communication control apparatus used in a mobile communication system which includes communication apparatuses having functions of base stations, a mobile station and a communication control apparatus which controls connections between said communication apparatuses and said mobile station (figures 2 & 19), wherein said mobile station switches a communication apparatus of a communication partner to another communication apparatus when a communication quality value between said communication apparatus of said communication partner and said mobile station falls below a first threshold which is better than a limitation value by which communication is available (paragraph 0230, lines 1-6), said handover control method comprising the steps of:

said communication control apparatus:

- said mobile station switching said communication apparatus of said communication partner to said handover destination candidate communication apparatus which is notified by said communication control apparatus when said communication quality value falls below said first threshold (paragraphs 0230-0232).

Lindsay, however, fails to disclose:

- receiving a handover history from the mobile station, said handover history identifying origination and destination base stations of previous successful handovers of the mobile stations;
- selecting at least a handover destination candidate communication apparatus from among communication apparatuses surrounding said communication apparatus of said communication partner based on at least on the received handover history;
- reserving wireless resources of said at least a handover destination candidate communication apparatus which is selected;
- notifying said mobile station of a handover destination candidate communication apparatus for which wireless resources are reserved in said at least a handover destination candidate communication apparatus.

In a similar endeavor, Raith discloses position assisted handoff within a wireless communications network. Raith also discloses:

- receiving a handover history from the mobile station, said handover history identifying origination and destination base stations of previous successful

handovers of the mobile stations (col. 6, line 31 – col. 7, line 20; col. 8, lines 14-21);

- selecting at least a handover destination candidate communication apparatus from among communication apparatuses surrounding said communication apparatus of said communication partner based on at least on the received handover history (col. 7, lines 1-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Raith's invention to arrive at the present invention because by receiving a handover history from the mobile station would assist the handover process more accurate, and efficient.

Furthermore, Ida discloses a mobile communications system and method for controlling transmission power. Ida further discloses:

- reserving wireless resources of said at least a handover destination candidate communication apparatus which is selected (paragraph 0053, lines 16-20);
- notifying said mobile station of a handover destination candidate communication apparatus for which wireless resources are reserved in said at least a handover destination candidate communication apparatus (paragraph 0053).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include reserving wireless resources and notifying the mobile station of a handover destination candidate so that the conversation would not be interrupted and the mobile station know which new base station is selected.

Regarding claim 3, Lindsay, Raith, and Ida disclose all the limitations of claim 1. In addition, Lindsay also teaches said mobile station judging whether said communication quality value falls below said second threshold, and sending a request for selecting said at least a handover destination candidate communication apparatus to said communication control apparatus when said communication quality value falls below said second threshold (paragraphs 0228, and 0230-0231).

Regarding claim 4, Lindsay, Raith, and Ida teach all the limitations of claim 1. Ida further teaches the steps of:

- when said communication control apparatus selects a plurality of handover destination candidate communication apparatuses (paragraph 0059), said communication control apparatus determining priorities of said plurality of handover destination candidate communication apparatuses (paragraph 0058);
- said communication control apparatus notifying said mobile station of handover destination candidate communication apparatuses in said plurality of handover destination candidate communication apparatuses for which wireless resources are reserved (paragraph 0053).

Even though Ida does not explicitly teach that the communication control apparatus determines priorities, eventually what the system does is to identify the mobile location and based on the signal strength, rank priorities of handover destination candidate communication apparatuses. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to rank priorities of

handover destination candidate communication apparatuses so that one best candidate can be selected.

Regarding claims 5, Lindsay, Raith, and Ida disclose all the limitations of claim 1. Raith also discloses the handover method comprising the steps of:

- said mobile station sending mobile station information to said communication control apparatus, said mobile station information including a history of movement of said mobile station and received powers of perch channels from communication apparatuses surrounding said communication apparatus of said communication partner (col. 6, lines 31-38);
- said communication control apparatus having a history of mobile station information, said history of mobile station information including a history of movement of said mobile station and received powers of perch channels from communication apparatuses surrounding said communication apparatus of said communication partner for past successful handover (col. 6, lines 38-50).
- said communication control apparatus selecting said at least a handover destination candidate communication apparatus according to said mobile station information sent from said mobile station and said history of mobile station information for past successful handover (col. 6, lines 50-54).

Regarding claim 6, Lindsay, Raith, and Ida disclose all the limitations of claim 5. Ida also teaches the communication control apparatus selects a plurality of handover destination candidate communication apparatuses (paragraphs 0058-0059).

Raith further discloses the communication control apparatus determining priorities of said plurality of handover destination candidate communication apparatuses according said mobile station information sent from said mobile station and said history of mobile station information for past successful handover (col. 6, lines 31-50).

Regarding claim 7, Lindsay, Raith, and Ida disclose all the limitations of claim 5. Raith further discloses the steps of: said communication control apparatus holding said history of mobile station information for all communication apparatuses controlled by said communication control apparatus (col. 6, lines 31-36).

Regarding claim 8, Lindsay, Raith, and Ida disclose all the limitations of claim 5. Lindsay further teaches the steps of: said communication control apparatus holding said history of mobile station information by each combination of a communication apparatus of handover origination and a communication apparatus of handover destination (paragraph 0234, lines 1-6).

Regarding claims 9, Lindsay, Raith, and Ida teach all the limitations of claim 8. Raith also discloses the handover control method comprising the steps of: said communication control apparatus selecting a communication apparatus of handover destination corresponding to history data in said history of mobile station information in which a correlation value between said history data and said mobile station information

sent from said mobile station is equal to or larger than a predetermined value (col. 13, lines 16-22).

In general, the communication control apparatus handovers to another communication apparatus as soon as one of the neighboring communication apparatuses is considered better than the serving communication apparatus. Therefore, based on the history data, the value of the history data and mobile station information has to be equal or larger.

Regarding claim 10, Lindsay, Raith, and Ida, disclose all the limitations of claim 9. Ida and Raith both teach the handover control method comprising the steps of: when said communication control apparatus selects a plurality of handover destination candidate communication apparatuses (Ida, paragraph 0059), said communication control apparatus determining priorities of said plurality of handover destination candidate communication apparatuses according to said correlation value (Raith, column 13, lines 16-22).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (571) 272-7798. The examiner can normally be reached on Monday-Friday; 9:00-6:00; alternating Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wayne Cai
Examiner
Art Unit 2681

ERIKA A. GARY
PRIMARY EXAMINER